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| 10/575,467      | 04/12/2006  | Shinichi Kaga        | 2006-0526A          | 3223             |

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| EXAMINER |
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COX, ALEXIS K

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| ART UNIT | PAPER NUMBER |
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3744

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06/04/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com  
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|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/575,467 | <b>Applicant(s)</b><br>KAGA ET AL. |  |
|                              | <b>Examiner</b><br>ALEXIS K. COX     | <b>Art Unit</b><br>3744            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 41-45 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Lee et al (US Patent No. 5,921,095) in view of Viegas (US Patent No. 6,062,030),

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Linstromberg (US Patent No. 5,060,486), and Goth et al (US Patent Application Publication No. 2003/0000232).

Regarding claim 41, Lee discloses a refrigerating storage cabinet comprising a heat insulating housing (5, see column 1 lines 42-45; 12, see column 4 lines 51-52 and column 5 lines 12-14) having a storage compartment (see figure 2); a refrigerating unit that includes a compressor (6, see column 4 line 35; see also column 1 line 29), and a condenser, expanding mechanism, and evaporator, as they are inherently present in the system of Lee et al. Lee further discloses the unit to be conformable to a plurality of refrigerating specifications (see column 6 lines 16-24), at least one being for refrigerating and one for freezing. Lee also discloses an identifying means (40, 31, see column 6 lines 4-16; see also figures 11 and 12) configured to identify the refrigerating specification (mode, examples given being refrigerating + refrigerating + freezing and freezing + refrigerating + refrigerating) of the heat storage compartment to which the refrigerating unit is detachably attached (14, 15, see column 5 lines 41-48) by providing an identification signal indicative of the identified refrigerating specification (see column 4 lines 11-15), a control unit (16, 17, see column 5 line 50; see also figure 6) for said refrigerating unit, the control unit being configured to select one of said plurality of refrigerating specifications based on said identification signal (31, see column 6 lines 29-31) and to control operation of said refrigerating unit in accordance with the selected one of said plurality of refrigerating specifications (see column 6 lines 4-24). The identifying means of Lee et al includes a detecting portion (microcontroller 16) provided on one of the refrigerating unit or the heat insulating housing, and a detected portion

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(switches 40, see column 6 lines 4-15) provided on an other of the heat insulating housing or the refrigerating unit, wherein an interaction between the detecting portion and the detected portion determines the identification signal (see column 6 lines 4-15; see also figure 12), and the detecting and detected portions are arranged close together, and have an interaction therebetween as a result of mounting said refrigerating unit to said heat insulating housing, with the identification signal being based on the interaction; and the control unit has a data storage that stores the plurality of refrigerating characteristics associated with said plurality of refrigerating specifications, as this is an inherent feature of the microcontroller of Lee. It is noted that Lee et al does not explicitly disclose the use of a single set of materials for both freezer and refrigerator modules, although as Lee et al only discloses a single pattern of construction, material proportions and types are the only variants disclosed by Lee et al to physically distinguish between freezer and refrigerator modules. It is further noted that Lee et al does not explicitly state the use of a time-varying change mode of dropping of a physical amount with respect to refrigeration, the physical amount including an internal temperature of the heat insulating housing; more specifically, Lee et al does not explicitly perform pull-down cooling and control refrigeration according to the internal temperature monitored. The programming concept of pull-down cooling in a multi-compartmented refrigerated space is well known in the art, as is demonstrated by Viegas (see column 3 lines 23-29), and as such it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the pull-down cooling of Viegas in the system of Lee et al in order to provide better temperature control within

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the refrigerator/freezer in question. Linstromberg explicitly discloses a single compartment which can be used as a refrigerator or freezer (see figure 2). As the only difference between the refrigerator and freezer compartments of Lee et al is materials, the varied selection of which was done to reduce construction costs, and it is well known as a common mechanical expedient to use the same materials to reduce construction costs by providing interchangeable parts and bulk discounts, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a single unit type for both refrigerator and freezer units in the system of Lee et al, as is disclosed by Linstromberg, in order to simplify assembly and therefore reduce labor costs.

It is further noted that the system of Lee, Viegas, and Linstromberg is not disclosed to have individual unit controllers on each subsection; indeed, Lee states that the usual expansion of a refrigeration system is more expensive because each additional unit requires an additional controller. However, the system of Lee was invented in 1997; it is well known that the price of microcomputer components reduces sharply over relatively short periods of time, such that a decade will mean that the same specifications on a component are available in a smaller size for much less money.

Goth et al explicitly discloses the use of a sub-controller for each unit of a refrigeration system (24, see paragraph 18), which is in communication with a primary controller (64, see also paragraph 18). In view of the fact that the price of microcontrollers went down radically in the time between the inventions of Lee and Goth et al, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the individual unit controllers of Goth et al in the system of Lee, Viegas, and Linstromberg in order to

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permit the separate functioning of each module, rather than permitting function of each unit solely when in combination with others.

Regarding claim 43, Lee et al discloses an information recording section storing supplemental information (31, 16, see column 6 lines 29-31 and 16-24) and an information conveying means for reading and communicating the supplementary information to the control means, and the supplementary information includes at least one of a size of the heat insulating housing or a heat invasion amount characteristic, as the temperature change of the interior space over time is a heat invasion amount characteristic (see column 6 lines 16-24).

Regarding claims 44 and 45, a pull down cooling characteristic is, as usually applied, one where faster or stronger cooling is applied when first starting a unit or when the temperature being controlled goes above an upper limit. This cooling is reduced or stopped at another threshold temperature or temperatures, such that the temperature is controlled in a range about the desired temperature. It is therefore disclosed by the systems of Lee et al and Viegas that the steps claimed in claim 37 be used in accordance with the specified refrigeration characteristic. Additionally, there is little point to calculating control characteristics without using them; as well as Lee discloses operation of the refrigerating storage cabinet according to the calculated characteristics (16, 17, see column 5 line 50, column 6 lines 16-24, and figure 6).

5. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US Patent No. 5,921,095), Viegas (US Patent No. 6,062,030), Linstromberg (US

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Patent No. 5,060,486), and Goth et al (US Patent Application Publication No. 2003/0000232) in view of Valence et al (US Patent No. 5,600,966).

Regarding claim 42, it is noted that Lee et al, Linstromberg, and Viegas do not explicitly disclose the presence of a condensation-preventing heater with variable heating performance located about an opening of the heat insulating housing or a switching device provided to switch the variable heating performance of the heater to correspond to the appropriate one of the plurality of refrigerating specifications. Valence et al discloses the presence of a condensation-preventing heater (46, see column 3 lines 38-43) with variable heating performance (46, 48, see column 4 lines 44-47) and located about an opening of the heat insulating housing, and the control unit of Lee et al (16, 17, see column 5 line 50; see also figure 6) is capable of controlling the heating element of Valence. Further, as the function and structure of Lee et al, Linstromberg, Viegas, and Valence et al are similar, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the condensation preventing heater of Valence et al in the system of Lee et al and Viegas to prevent excess condensation, as stated in column 3 line 43 of Valence et al.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 41-45 have been considered but are moot in view of the new ground(s) of rejection.

To the extent that the applicant's arguments are still applicable:

It is argued on page 8 that Lee fails to disclose the refrigerating unit to be detachable mounted to a heat insulating housing.



The examiner respectfully disagrees. Each unit of the system of Lee can be added to an existing system, to expand it. It follows logically that each unit may be removed from that system, if the increased capacity is no longer required.

It is further argued on page 8 that Lee fails to disclose a common control unit that can be used for refrigeration or freezing.

Again, the examiner must respectfully disagree. As the overall controller of Lee can run both freezing and refrigeration units, according to what is detected to be present, the control unit of Lee is controlling both freezing and refrigeration units.

Regarding the argument that the different units of Lee, for freezer and fridge, are constructed differently, the examiner respectfully submits that the difference in construction is due to convenience and efficiency, not a difference in capability. The simple fact that it is not uncommon to accidentally freeze items in a conventional refrigerator, merely by being inattentive regarding the temperature setting, should make this clear.

Third, it is argued on page 8 that Lee includes only one microcontroller. This is moot in view of the inclusion of Goth et al.

Fourth, it is argued that the identifying means of Lee fails to include a detecting and detected portion. The example disclosed in Lee is that of a 2-unit system. Each unit has its own switch, as can be seen in figure 11. This switch is closed for refrigerating, and open for freezing; each switch is operated in response to the presence of a unit of a particular type. This operation constitutes the signal being a result of an interaction between detecting and detected portions.

Thus, Lee discloses the features recited in claim 41, when combined with Viegas, Linstromberg, and Goth et al, and the above arguments are unpersuasive, and all pending claims are unpatentable over the prior art of record.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Parthasarathy et al (US Patent No. 7,680,751) discloses a relevant refrigeration system.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXIS K. COX whose telephone number is (571)270-

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5530. The examiner can normally be reached on Monday through Thursday 9:00a.m. to 6:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules or Cheryl Tyler can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AKC/

/Frantz F. Jules/  
Supervisory Patent Examiner, Art Unit 3744